

AMENDMENTS TO THE CLAIMS

1.-13. (Canceled).

14. (Currently Amended) ~~A method in accordance with claim 13,~~
A method of reading out an image signal from a plurality of
photosensitive cells for performing a photoelectric conversion for
incident light arranged two-dimensionally in a photosensitive array
for receiving the incident light, the photosensitive cells being
arranged obliquely adjacent to each other at positions shifted from
each other by a length in row and column directions that is
substantially equal to the half of a pitch at which the
photosensitive cells are disposed in the row and column
directions, wherein an image signal output from an image pickup
section for transferring signal charge obtained by the
photoelectric conversion by each of the photosensitive cells in
response to a drive signal at a predetermined timing is converted
to a digital signal, and a picture signal is generated by
performing a signal processing on the digital signal,

said method comprising the steps of:

setting one of a whole-pixel reading out mode of reading out
the signal charge from all of the photosensitive cells of at least
three separated colors and a specifying reading out mode of
reading out the signal charge from only the photosensitive cells
of at least one of the separated colors;

generating the drive signal in response to the mode set, and selectively supplying the drive signal generated;

separating the incident light to the at least three separated colors;

allowing the incident light separated to be incident onto the photosensitive cells;

reading out the signal charge obtained from all of the photosensitive cells in response to the drive signal supplied in the whole-pixel reading out mode, and performing a field shift for the signal charge only from the photosensitive cells corresponding to the at least one separated color among the photosensitive cells in response to the drive signal supplied in the specifying reading out mode;

transferring the signal charge in a column direction, which is transferred in the shift step of reading out, with potential formed in response to the drive signal supplied; and

transferring the signal charge, after transferred a line shift to an end of the transfer path in the step of transferring, in a horizontal direction, with potential formed in response to the drive signal supplied,

wherein the separated colors are primary colors, red R, green G and blue B, the at least one separated color being G,

wherein said step of generating the drive signal comprises the substeps of:

generating a field shift signal which is for reading out the signal charge from the photosensitive cells of the color G of the color filter in said specifying reading out mode;

generating a timing signal of a column transfer which sets a transfer distance to a value equivalent to two lines when the field shift signal is supplied and the signal charge is transferred in the column direction; and

generating a timing signal of a row transfer to transfer the signal charge transferred in a row direction and to output the signal charge after performing a line shift by transferring the signal charge in the column direction;

said substeps being iterated to thereby read out the signal charge from the photosensitive cells of the color G.

15. (Original) A method in accordance with claim 14, wherein in said substeps of generating a timing signal of a row transfer, the timing signal of the row transfer is generated for transferring the signal charge in the row direction by a transfer distance equivalent to two lines, and being iterated, and in the said row signal supply step of the second time, all of the signal charges of the photosensitive cells of the color G are read out.

16. (Currently Amended) A method in accordance with ~~claim~~ 13claim 14, wherein in said step of generating the drive signal a predetermined region of at least 1/4 or more of an effective imaging field is specified to a specified reading out region of the signal charge which is approximately symmetrical with a center in the column direction when said signal charge is read out from the photosensitive cells of the color G of the color filter in the specifying reading out mode, and the drive signal is supplied to the specified reading out region as the drive signal for an independent specified electrode.

17. (Currently Amended) A method in accordance with ~~claim~~ 13claim 14, wherein said step of reading out the signal charge comprises the substeps of preparing a plurality of transfer devices arranged in the column direction into groups each including eight transfer devices, and performing a field shift only by two electrodes associated with the photosensitive cells of the color filters of the color G among electrodes supplied with the drive signal at a predetermined timing corresponding to the transfer devices, and

wherein in the whole-pixel reading out mode, among the photosensitive cells associated with each of groups, the first and fifth transfer devices in the line including the color filters of the color G are supplied and operated with one drive signal, and

the third and seventh transfer devices in the line including the color filters of the colors R and B are supplied and operated with another drive signal.

18. (Original) A method in accordance with claim 17, wherein in said step of reading out the signal charge, said other drive signal supplied to the first and fifth transfer devices in the specified reading out region in the specifying reading out mode is used as a drive signal for an independent specified electrode, which is distinguished from the one drive signal in the whole-pixel reading out mode.

19. (Original) A method in accordance with claim 15, wherein in said step of generating the drive signal a predetermined region of at least $1/4$ or more of an effective imaging field is specified to a specified reading out region of the signal charge which is approximately symmetrical with a center in the column direction when said signal charge is read out from the photosensitive cells of the color G of the color filter in the specifying reading out mode, and the drive signal is supplied to the specified reading out region as the drive signal for an independent specified electrode.

20. (Original) A method in accordance with claim 19, wherein said step of reading out the signal charge comprises the substeps of preparing a plurality of transfer devices arranged in the column direction into groups each including eight transfer devices, and performing a field shift only by two electrodes associated with the photosensitive cells of the color filters of the color G among electrodes supplied with the drive signal at a predetermined timing corresponding to the transfer devices, and

wherein in the whole-pixel reading out mode, among the photosensitive cells associated with each of groups, the first and fifth transfer devices in the line including the color filters of the color G are supplied and operated with one drive signal, and the third and seventh transfer devices in the line including the color filters of the colors R and B are supplied and operated with another drive signal.

21. (Original) A method in accordance with claim 20, wherein in said step of reading out the signal charge, said other drive signal supplied to the first and fifth transfer devices in the specified reading out region in the specifying reading out mode is used as a drive signal for an independent specified electrode, which is distinguished from the one drive signal in the whole-pixel reading out mode.